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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,379	10/18/2005	Gerhard Eser	78857.105313	3677
86528	7590	08/19/2011		
King & Spalding LLP 401 Congress Avenue Suite 3200 Austin, TX 78701			EXAMINER COLEMAN, KEITH A	
			ART UNIT 3783	PAPER NUMBER
			NOTIFICATION DATE 08/19/2011	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

AustinUSPTO@kslaw.com  
AustinIP@kslaw.com

# Office Action Summary

**Application No.**

10/553,379

**Applicant(s)**

ESER ET AL.

**Examiner**

KEITH COLEMAN

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**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 May 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 5) ☒ Claim(s) 10,12-17,19-23 and 25-29 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 10,12-17,19-23 and 25-29 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

**DETAILED ACTION*****Claim Rejections - 35 USC § 102***

**Claims 10, 12, 17, 23, 25, and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Joos et al. (US Patent Publication 2004/0237937).**

With regards to claims 10, 12, and 25, the publication to Joos et al. discloses determining a desired fuel pressure value (i.e. desired fuel pressure represented by fuel pressure via pressure sensor 50, which is controlled by regulating device 52 as discussed in Paragraph 41); determining an actual fuel pressure value (i.e. actual gradient value calculated from individual measurements, See Paragraph 47) by a fuel pressure sensor (50); calculating an actual fuel pressure gradient from at least two consecutive actual fuel pressure values from said fuel pressure sensor (See Paragraph 47); comparing the calculated actual fuel pressure gradient to a specified threshold gradient value (i.e. limiting value G, See Figure 3); and if the calculated actual fuel pressure gradient is above the specified threshold gradient value (i.e. the pressure is calculated to be in the high-pressure region 56, See Paragraph 48) then determining an actuating signal as a function of the desired fuel pressure value (i.e. a comparison is made in Step 64 in Figure 4) and the calculated actual fuel pressure gradient (G); and controlling said regulator valve (18) with said actuating signal (i.e. sending a control bit B\_EKP to the electric fuel pump 16, See Paragraph 43).

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As to the newly added limitation of “wherein the desired fuel pressure value represents a fuel pressure, in contrast to the calculated actual fuel pressure gradient which represents a change in fuel pressure over time,” the cited reference states that desired fuel pressure does represent a fuel pressure via pressure sensor 50, which is controlled by regulating device 52 as discussed in Paragraph 41. Furthermore, the desired pressure is always calculated to maintain pressure within a certain region as discussed in Paragraph 45.

In addition, fuel pressure gradient G is calculated over time as discussed in Paragraph 47.

With regards to claims 17 and 23, the publication to Joos et al. discloses if the calculated actual gradient is below said specified threshold gradient value (i.e. low pressure region 54, See Paragraph 44) then determining the actuating signal as a function of the desired fuel pressure value (i.e. control bit B\_EKP is not zero).

With regards to claims 27-29, the publication to Joos et al. discloses the step of supplying fuel injectors (i.e. fuel injection devices 38, See Paragraph 40) with fuel having the fuel pressure regulated by said regulator valve (18).

***Claim Rejections - 35 USC § 103***

**Claims 13-16 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joos et al. (US Patent Publication 2004/0237937) in view of Amann et al. (US Patent No. 5,345,916)**

With regards to claims 13, 15, 16, 19, 21, and 22, the publication to Joos et al. discloses all the limitations of the claimed subject including regulating valve 18 for electric pump 18, except positively disclosing *wherein the regulator valve is an electromagnetic regulator and an energization of the electromagnetic regulator is influenced by the actuating signal.*

The patent to Amann et al. discloses *wherein the regulator valve (60) is an electromagnetic regulator (i.e. via solenoid regulator 82, See Col. 7, Lines 60-68) and an energization of the electromagnetic regulator is influenced by the actuating signal (i.e. signal sent by microcontroller 80, See Col. 7, Lines 60-68).*

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the valve regulator of Joos et al. with a electromagnetic valve in view of the teaching to Amann et al., in order to improve fuel consumption efficiency (See Col. 2, Lines 30-35 from Amann et al.)

With regards to claims 14 and 20, the combination of Joos et al. and Amann et al. discloses all the limitations of the claimed subject matter including Joos et al. disclosure of wherein the step of controlling said regulator valve with said actuating signal includes: if the flow rate increases (i.e. if the engine is running, the switching valve of the flow restrictor 48 is energized to close and

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regulator 18 is deactivated to increase pressure, See Paragraph 46), decreasing an energization of the electromagnetic regulator (i.e. deactivating regulating valve 18); and if the flow rate falls (i.e. if the engine is not running or in the low pressure region 54, the switching valve of the flow restrictor 48 is unenergized to open and regulator 18 is activated, See Paragraphs 27 and 46), increasing the energization of the electromagnetic regulator (18).

**Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Joos et al. (US Patent Publication 2004/0237937) in view of Ismailov (US Patent Publication 2003/0217737)**

With regards to claim 26, the publication to Joos et al. discloses all the limitations of the claimed subject matter except positively disclosing *wherein the actual fuel flow rate is determined by means of a flow sensor*.

The publication to Ismailov discloses *wherein the actual fuel flow rate (i.e. fuel flow gradient is ascertained by fuel sensor 200 calculated with ECU 214, See Paragraph 59) is determined by means of a flow sensor (200)*.

It would have been obvious to one of ordinary skill at the time the invention was made to provide the fuel injection system of Joos et al. with a fuel flow sensor in view of the teaching to Ismailov, in order to improve fuel economy and provide better feedback to the engine control unit (See Paragraph 22 from Ismailov)

***Response to Arguments***

Applicant's arguments with respect to claims 10, 12-17, 19-23, and 25-29 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH COLEMAN whose telephone number is (571)270-3516. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cuff can be reached on 571-272-6778. The fax

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phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KAC

/K. C./

Examiner, Art Unit 3783 /Noah Kamen/Primary Examiner, Art Unit 3783